MELATONIN AMELIORATES DECREASE IN RAT GASTROCNEMIUS MUSCLE CATALASE ACTIVITY INDUCED BY CARBON TETRACHLORIDE

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Skeletal muscle tissue is known to be susceptible to oxidative tissue damage that accompanies different disorders. Carbon tetrachloride (CCl₄) is dangerous chemical that is used to mimic disorders, in experimental animals, related to reactive oxygen species induced tissue damage. It is well established that antioxidants, both natural and synthetic ones, are able to alleviate tissue damage caused by reactive oxygen species. The aim of the present study was to determine the effects of melatonin (MLT), a strong naturally occurring antioxidant, on changes in Wistar rat skeletal muscle catalase activity acutely induced by CCl₄. Gastrocnemius muscle tissue, in which catalase activity was determined, was obtained from three groups of animals i.e. control (untreated), CCl₄ treated and MLT and CCl₄ group. The results revealed statistically significant decrease in muscle tissue catalase activity in rats exposed to CCl₄, while in the group that received MLT and CCl₄ this decrease was insignificant. The protective activity of MLT could be contributed to its different mechanisms since it is known to directly scavenge free radicals, increase tissue antioxidant capacity and to up-regulate antioxidant enzyme gene expression.

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